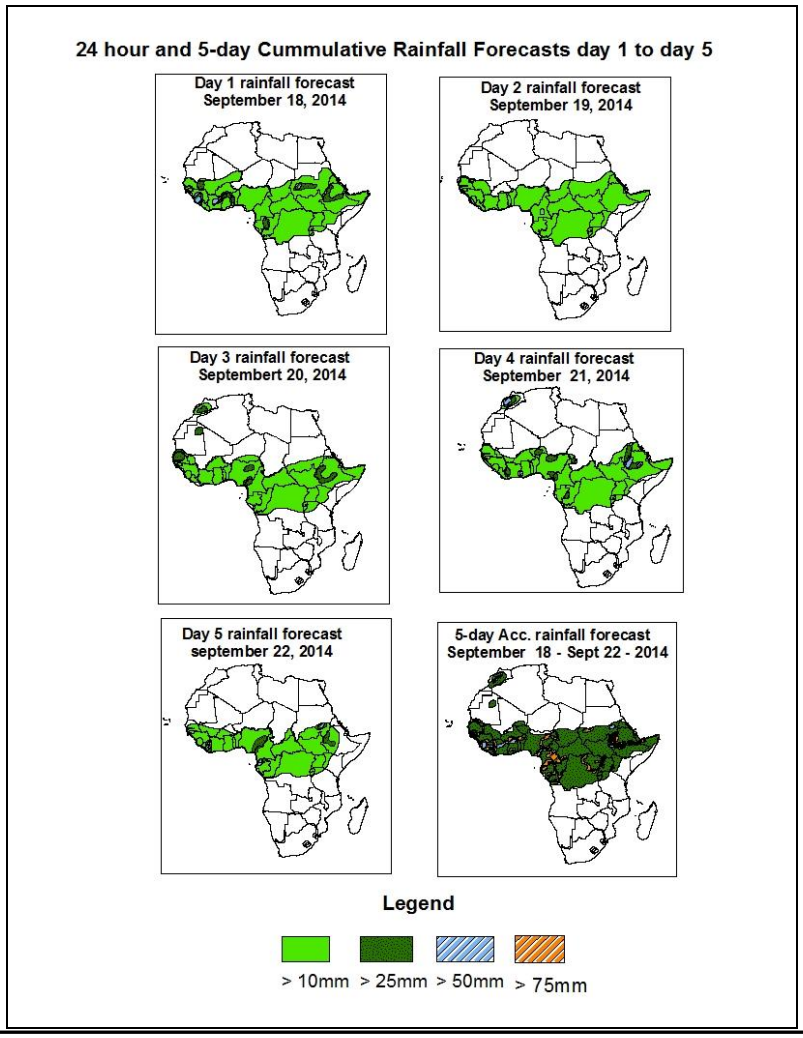
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall Forecast: Valid 06Z of September 18 – 06Z of September 22, 2014. (Issued at 1800Z of September 17, 2014)

1.1. Twenty Four Hour Cumulative Rainfall Forecasts

The forecasts are expressed in terms of 75% probability of precipitation (POP) exceeded, based on the NCEP/GFS and the NCEP global ensemble forecasts system (GEFS) and expert assessment.

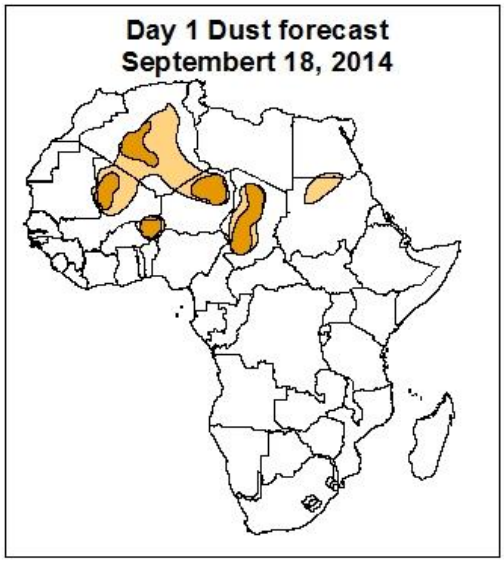


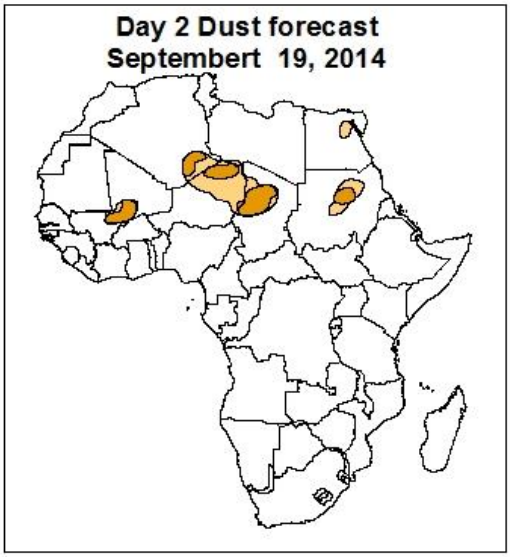
Summary

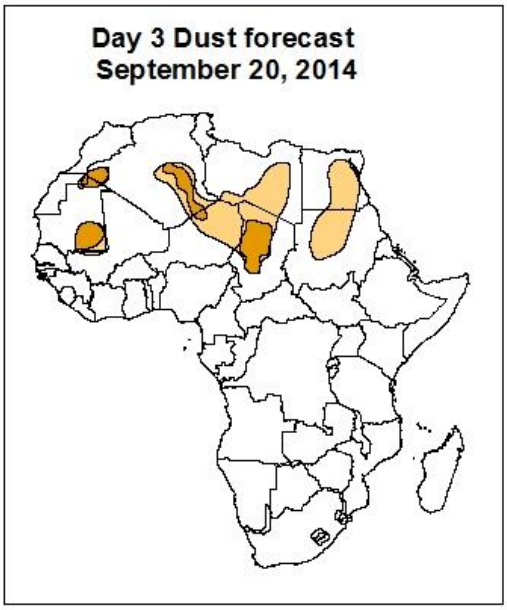
In the next five days, the monsoon flow from the Atlantic Ocean with its associated convergence across the southern Sahel, localized wind convergences over Ethiopia, DRC and Uganda and the neighboring areas, and active easterly wave activity across West Africa are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for moderate to heavy rainfall over Senegal, Guinea-Conakry, Liberia, Benin, Togo, Ghana, Ivory Coast, Nigeria, Gabon, Sierra Leone, Congo Brazzaville, Cameroon and CAR, portions of Burkina Faso, Sudan, DRC and Ethiopia, local areas in Mauritania, Mali, Uganda, western Kenya, southeastern Niger and southern Chad,

Atmospheric Dust Forecasts, day 1 to day 3,

Moderate Dust Concentration (MDC) and High Dust Concentration (HDC)







Highlights

There is an increased chance for moderate to high dust concentration over Algeria, Niger, Mauritania, Chad and Mali.

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.2. Model Discussion: Valid from 00Z of September 17, 2014

The Azores high pressure system over the Northeast Atlantic Ocean is expected to weaken from 24 to 48hours with its central pressure value decreasing from about 1024hpa in 24 hours to 1022hpa in 48hours, and it maintains from 48 to 72 hours, its central pressure value of about 1022hpa, and then it is expected to intensify from 72hours to 120 hours, with its central pressure value increasing from about 1022hpa in 72hours to 1031hpa in 120 hours, according to the GFS model.

The St Helena high pressure system over the Southeast Atlantic Ocean is expected to intensify from 24 to 48 hours, with its central pressure value increasing from about 1024hpa in 24 hours to 1026hpa in 48hours, and it maintains from 48 to 72 hours, its central pressure value of about 1026hpa, and then it is expected to weaken from 72 to 120hours with its central pressure value decreasing from about 1026hpa in 72 hours to 1021hpa in 120hours, according to the GFS model.

The Mascarene high pressure system over the southwestern Indian Ocean is expected to weaken slightly from 24 to 48 hours, with its central pressure value decreasing from about 1031hpa in 24 hours to 1030hpa in 48hours, and then it is expected to intensify from 48 to 120 hours, with its central pressure value increasing from about 1030hpa in 48 hours to 1036hpa in 120hours, according to the GFS model.

The central pressure value associated with the heat low in the region between western and central Sahel is expected to vary in the range between 1008hpa and 1009hpa during the forecast period. The heat low over Sudan is expected to vary in the range between 1006hpa and 1009hpa from 24 to 120 hours. The heat low across DRC is expected to vary in the range between 1009hpa and 1010hpa during the forecast period, according to the GFS model.

At 925Hpa level, a zonal wind convergence is expected to prevail in the region between Mauritania and Sudan through 24 to 120 hours. Dry northeasterly winds are expected to prevail over parts of Algeria, Sudan, Niger, Chad and Mali. Local wind convergences are also expected over DRC, Tanzania, Uganda, Burundi, Rwanda and Ethiopia during the forecast period**.**

At 850Hpa level, a cyclonic circulation with its associated trough is expected to propagate westwards between Nigeria and Senegal through 24 to 120 hours. Local wind convergences are expected to remain active over DRC, Uganda, Tanzania, Burundi, Rwanda, Eritrea and Ethiopia during the forecast period.

At 700hpa level, a trough in the easterly flow is expected to propagate westwards between Nigeria and southern Mauritania through 24 to 120 hours.

At 500Hpa level, a zone of moderate wind (>30kts), associated with African easterly jet is expected to propagate Sudan, Burkina Faso, Mali and Senegal into the Atlantic Ocean through 48 hours to 120 hours.

In the next five days, the monsoon flow from the Atlantic Ocean with its associated convergence across the southern Sahel, localized wind convergences over Ethiopia, DRC and Uganda and the neighboring areas, and active easterly wave activity across West Africa are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for moderate to heavy rainfall over Senegal, Guinea-Conakry, Liberia, Benin, Togo, Ghana, Ivory Coast, Nigeria, Gabon, Sierra Leone, Congo Brazzaville, Cameroon and CAR, portions of Burkina Faso, Sudan, DRC and Ethiopia, local areas in Mauritania, Mali, Uganda, western Kenya, southeastern Niger and southern Chad,

2.0. Previous and Current Day Weather Discussion over Africa

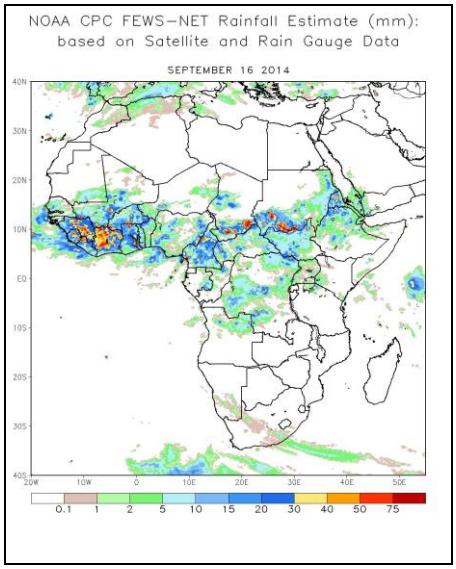
(September 16, 2014 – September 17, 2014)

2.1. Weather assessment for the previous day (September 16, 2014)

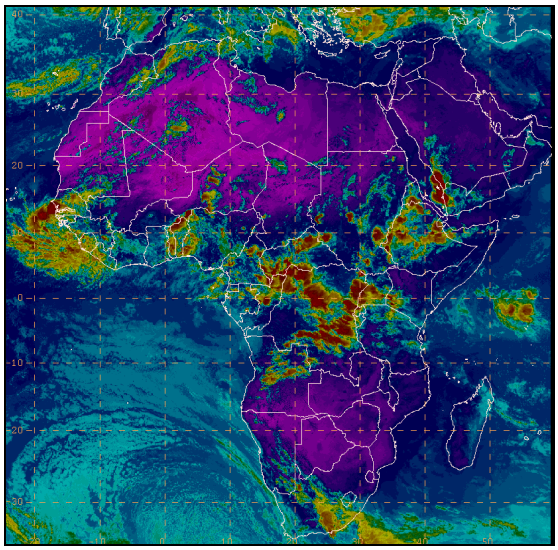
During the previous day, moderate to heavy rainfall was observed over Guinea-Conakry, Benin, Togo, Liberia, Sierra Leone, Burkina Faso, Ivory Coast, Cameroon and Eritrea, portions of Mali, Senegal, Nigeria, CAR, Nigeria, Niger, Sudan, Ethiopia and Chad, local areas in Mauritania and Uganda, Northern Gabon, Tanzania and Congo Brazzaville, western Kenya.

2.2. Weather assessment for the current day (September 17, 2014)

Intense clouds are observed over portions of Benin, Togo, DRC, CAR, Uganda Eritrea and Ethiopia, local areas in Senegal, Guinea-Conakry, Sierra Leone, Liberia, Niger, Nigeria, Cameroon, Gabon and Sudan, Northern Congo Brazzaville, Rwanda and Tanzania, eastern Kenya.



IR Satellite Image (valid 1500 Z of September 17, 2014)



Previous day rainfall condition over Africa (top Left) based on the NCEP CPCE/RFE and current day cloud cover (top right) based on IR Satellite image

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